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Report  
of the  
COMMITTEE OF CONSULTANTS  
Appointed by the Secretary of Agriculture  
to review the  
ACCELERATED PROGRAM OF THE FEDERAL GOVERNMENT  
IN COOPERATION WITH THE STATES AND TERRITORIES,  
TO CONTROL AND ERADICATE BOVINE BRUCELLOSIS IN  
THE UNITED STATES

Washington, D. C.

March 28, 1956

Committee Members:

Chairman: W. A. Hagan, Dean, New York State Veterinary College,  
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The Committee has had four meetings, other than those in which public hearings were conducted. One-day public hearings were held in Salt Lake City, Fort Worth, Omaha, New York City, Atlanta, and Chicago. As a group the committee also attended the annual meeting of the National Brucellosis Committee in Chicago.

#### Collection of Information

At its first meeting the Committee listened to explanations of why it was appointed and what the Department hoped it would accomplish, by Dr. B. T. Shaw and Dr. M. R. Clarkson, Administrator and Deputy Administrator, respectively, of the Agricultural Research Service. The committee also received a series of technical reports from experts of the Department on program objectives and accomplishments, the problems faced, and the latest research information on the disease itself. It was pointed out clearly by the administrative officers that ARS would provide all possible help in examining carefully the present stepped-up program directed toward eliminating bovine brucellosis. The Committee was urged to solicit and consider the opinions and attitudes toward the program held by livestock owners and disease-control officials of the states and territories in arriving at its decisions. The Committee was given a free hand in determining the ways in which the investigations would be carried on. It was told that criticisms of any and all aspects of the present procedures and policies would be welcomed and that recommendations for necessary and desirable changes were wanted.



## Questionnaires

It was decided at the first meeting to sound out, by means of a questionnaire, the opinions of interested individuals, organizations, and State agencies on a number of pertinent questions. A copy of this questionnaire is attached. This was sent to 14 national organizations concerned with livestock, each being asked to poll their state subsidiaries or in some other manner satisfactory to them to ascertain for us the attitudes of their members. Copies were also sent to the Extension Directors of the Land-Grant Colleges and Universities in all of the states and territories asking them to ascertain for us, as best they could, the sentiments of the interested groups in their respective states. The State Departments of Agriculture and Livestock Sanitary Boards were advised of the Committee's activities and they were also sent questionnaires.

The filled-in questionnaires were returned from 47 States and from the territories of Puerto Rico, Alaska, and Hawaii. Six national organizations, the American Farm Bureau Federation, the National Grange, Livestock Conservation, Inc., the National Association of Commissioners, Secretaries, and Directors of Agriculture, the American National Cattle-men's Association, and the American Veterinary Medical Association, replied. Partial answers, general comments, or acknowledgments were received from five other organizations.

It was learned from these questionnaires that 22 states have already set dates by which time they hope to become brucellosis certified, and one other has set a date for dairy but not for beef cattle. These, added to three states that already are certified, make a majority that have target dates falling within the next five-year period. In the course of



our public hearings we learned that many other states are considering setting target dates. It is our opinion that most of the states and territories will have such dates established within the next year or two, and that most of these will fall within the time period of the next five years.

We found, also, that a great majority of the replies indicated that the present program was working satisfactorily and had the support of the groups polled. There were qualifications in many answers but these generally involved details rather than principles. There seemed to be only a few controversial questions. Many of the criticisms were directed toward state organizations and procedures rather than to those of the Federal government. Questions and criticisms were expressed here and there that we felt should be explored more fully. It was for this reason, and also to give all interested parties the feeling that their views were being considered, that the Committee decided on the regional hearings.

#### Public Hearings

The six public hearings were held in strategic centers to make it as convenient as possible for interested persons in all parts of the country to attend. They were advertised well in advance. The attendance was considered to be very satisfactory, the number varying from about 20 to more than 100. Opportunity was given to all who wished to express their opinions. Each witness first made whatever remarks he wished, after which most of them were questioned by members of the Committee. All of the hearings were held in a very friendly atmosphere and many commended the committee on its willingness to listen to all who had anything to say. We believe that these hearings were very useful, not only in getting "grass

roots" opinions but in engendering a feeling that the Department of Agriculture was really trying to work out a program which would be acceptable to all.

### Recommendations

1. Calfhood vaccination with Brucella abortus Strain 19 is the backbone of the control and eradication program in the United States. Without it national control would be difficult and expensive, and eradication almost impossible. Too much should not be expected of vaccination, however. Some have developed the belief that it alone is sufficient to eradicate the disease. This is not true, since the vaccine is not perfect and it will not wholly prevent infections with virulent organisms. Consistent vaccination of calves in infected herds over a period of from 3 to 5 years generally will eliminate most abortions caused by brucellosis, and will greatly reduce the number of animals that react to the blood test and to milk and cream ring tests. Final clean-up of herds will have to be made by blood tests of individuals, or by repeated brucellosis ring tests (BRT) of herds followed by individual blood tests of animals that make up ring-test suspicious herds. It has been the experience all over the country, in range as well as dairy herds, that after several years of calf vaccination, few and sometimes no blood reactors have to be removed to qualify them for certification.

Calfhood vaccination is recommended in all herds that are subject to exposure. In those in which the incidence of infection is high, more can be accomplished by a few years of calfhood vaccination than in any other way. In herds in which the incidence of infection is low, or even in those in which no infection exists, we think calfhood vaccination still should be recommended in most cases to protect them from the hazards of reinfection.

It is our opinion, in fact, that calfhood vaccination should be recommended in all regions in which any infection is known to exist until the time is reached when all infection has been stamped out. It is the surest way to prevent extensive and disastrous "breaks." Vaccination should not be discontinued until brucellosis caused by Br. abortus no longer exists in our cattle. When that time is reached we can discontinue it and pack the disease away in our history books, providing we then establish very rigid import regulations to prevent the re-entry of the disease from abroad.

2. It is our belief, and we recommend, that the federal government should use its influence with the cooperating states to make fuller use of the brucellosis ring test as a means of locating infected dairy herds. It is now being used very successfully (with follow-up blood tests in suspicious herds) in a number of states, but all have not adopted it. This method will greatly lessen the cost and expedite the program, since several brucellosis ring tests can be made in less time and at lower cost than a single blood test of a herd. There is much to be gained by a rapid follow-up of initial surveys of areas, and by frequent surveys of modified certified areas.

3. The "Uniform Methods and Rules" under which the program is now working provide that Modified Certified Areas may be designated for a period of three years when a blood test of all the cattle shows not more than 1 percent individual reactors and the number of infected herds does not exceed 5 percent.

We believe that this three-year period of certification and recertification is too long, particularly if rather free interchange of cattle is permitted in these areas. We believe that a more economical and sounder approach to the problem of locating foci of infection as early as possible in such areas is by frequent use of the brucellosis ring test in dairy herds.



It should be possible to use this test semi-annually (with blood tests of suspicious herds) at no greater and probably at lesser expense of time and money than is now entailed by the triennial blood test required by the regulations. Some states have laws that will have to be changed to permit this substitution. We recommend that the Department give serious consideration to this change in the regulations.

4. Range and semi-range areas may qualify, under present regulations, as Modified Certified Brucellosis-Free Areas by blood testing all dairy cattle, all purebred cattle, and not less than 20 percent of the range and semi-range cows over 3 years of age in each herd, providing the number of reactors does not exceed the maximum allowed for certified areas.

The blood testing of 20 percent of range herds is often difficult and is disliked by most ranchers. Many of the latter and many of the livestock sanitary officials of the range states are proposing an alternative method of sampling the range herds which they think would serve as well or perhaps even better and which would not entail extra handling of the cattle. The proposal is that testing of range cows be confined to the cull and dry cows that are annually removed from the range and sent to slaughter as unprofitable to retain longer on the range. It is argued that infected, aborting cows would automatically gravitate into this group, which is generally about 10 percent or more annually of the total herd. It is believed that this group would give as good or a better reflection of the disease in the herd than would the present method of random sampling of 20 percent.

In some instances state officials think that it would be possible to identify these animals and to collect blood samples for tests at slaughter establishments. In others, where the animal could not be satisfactorily traced, it would be necessary to collect the blood before the stock were shipped from the ranch.

It is the opinion of your Committee that the feasibility and efficiency of this method for detecting brucellosis in range herds should be made the subject of a special study by the Department. It is recommended that if, as a result of these studies, the method proves satisfactory, it be incorporated in the "Methods and Rules" as an alternative procedure.

It is recognized that if this method is approved some rules should be made on the minimum number of dry and cull cows which must be tested annually to determine the status of the herd. It is suggested that not less than 10 percent of the herd or not less than 20 cows, whichever is the larger, might be used.

If the dry and cull cows do not constitute 10 percent of the herd, the triennial testing could be substituted for the annual testing of dry and cull cows. In the triennial tests presently required for recertifying, it is suggested that there be a minimum of 20 percent of the herd or not less than 20 cows.

5. Until the last two years it was the policy of the Department to make funds available for the payment of indemnities for the slaughter of reacting cattle only when the cooperating states matched these funds from their own resources. At the present time federal funds may be used for this purpose even though the state contributes none. However, federal indemnity is not paid without state approval. The plan differs in the different states--in some no indemnity is paid, in others indemnity is paid only from federal funds, and in still others both state and federal funds are used. There are wide differences of opinion on these policies; however, your Committee recognizes that the differences in the educational programs and previous practices in the different states cannot be changed without much confusion and delays, and since all of these plans are moving toward the

common objective, it believes it would be best not to make changes simply to gain uniformity. We recommend, therefore, that the present policies with respect to the payment of indemnities from federal funds not be changed.

6. More educational work is needed on the subject of bovine brucellosis and the program for its control and eradication. The hearings about the country brought out the fact that these programs apparently were very good in most areas and that little had been done in others. Since much of the effort is still voluntary, and it should be continued on this basis at least until it is nearing completion, its momentum depends to a great extent upon a full knowledge of the disease by the cattle owners. From the testimony which we heard in all parts of the country, we are convinced that the incidence of the disease and the financial losses which many owners fear will be entailed in the cleaning-up process are exaggerated. Bulletins, leaflets and other educational material produced in simple form readily understood by laymen should be issued by the Department, and the use of such materials by the states should be encouraged. Some of the better materials produced by many of the states might well be collected and distributed to other states to stimulate better coverage.

The brucellosis film, "Triple Threat," which the Department produced some years ago, served an excellent purpose. This film is now out of date in some respects, and the fact that it is old and has been seen by many, even though they may have forgotten its story, reduces greatly its present usefulness. We recommend that the Department produce, and widely distribute, a new film on this disease.

7. More research on bovine brucellosis is needed. It should be supported by both state and federal governments. A way to distinguish clearly between vaccinal and infection-produced blood titers, and improvements in the



diagnostic tests are the most obvious needs. It should be said, however, that great progress has been made and we are convinced that eradication can be achieved with the tools that we now have. Imperfections in present techniques exist but they are not great enough to seriously interfere with steady progress toward the goal.

8. The use of lay technicians in the field program in regions of the country where veterinarians are not available should be permitted rather than allow the work to lag. Where this is done it is recommended that they be full-time state or federal employees, trained by state and/or federal veterinarians under whose immediate supervision they should work, and that they be approved by both state and federal livestock sanitary officials of the states in which they work.

In many areas ranchers have long been vaccinating their own calves. Since owner vaccination cannot be accepted officially, the program can be advanced and interstate shipping regulations be met only by developing enough properly trained and authorized men to do this work. The drawing of blood samples presents the same problem.

This recommendation is made with reluctance. We do not see any alternative, however, and believe the urgencies of the program demand that professional concessions be made. Furthermore, we feel that if the training of the laymen be well done and their work is closely supervised by veterinarians, there need be no sacrifices made in the quality of the work done.

9. We have found that more than half of the states and territories have set target dates, falling within the next five-year period, for achieving modified-certified status, and that many others are deliberating the matter now and some of these undoubtedly will set such dates soon. We recommend that the Department encourage all states to establish such



objectives and to work consistently toward them. Tax money is best spent when it is used with a definite objective, and we feel the Department should consider this matter when allotting federal funds to the individual states.

10. Where over-age vaccination has been practiced, many residual blood titers will be found that cannot be distinguished by any practicable method from those resulting from active infection. Many range and some dairy herds have been subjected to adult vaccination over a considerable number of years and until very recent times. To attempt test and slaughter in such herds would be expensive and wasteful. All adult vaccination should be discouraged except, perhaps, in exceptional cases in heavily infected herds where abortion losses are great.

Calfhood vaccination should be encouraged as a replacement for adult vaccination programs. After several years have elapsed following discontinuance of adult vaccination, natural attrition will eliminate most of the vaccinal reactors. Compulsory programs of testing should be delayed in such herds for from three to five years.

11. In the hearings throughout the country, we have found much enthusiasm among state officials, livestock organizations, and individual cattlemen for the accelerated program against bovine brucellosis. Apparently everybody is in favor of pushing ahead as rapidly as possible toward elimination of the disease. The majority of the states have made larger appropriations than formerly for their share of the work. Most of the states could expedite the work still more if additional funds were available. It is important, we think, that the momentum gained during the last two years not be lost because of the lack of financial support, and this means that even larger appropriations should be made by both state and federal governments during the next few years. We are convinced that it will be cheaper in the end to carry this program through to completion as soon as possible.

We are not in possession of enough facts to enable us to suggest what appropriations should be requested by the Department of the Congress to support the federal part of the program. The amount required must be worked out annually by the Department, whose officials must consult with each of the states. This is not a program which will require ever-increasing annual appropriations, for the time is not far off when it will be possible to cut back on many state programs as a result of completion of the initial testing programs and the achievement of modified-certified status. Three states have achieved this status now and others are nearing it, but on the other hand we have still others in which the program has only been well started. We recommend that the Department seek annual appropriations that will enable it to carry the federal share of the burden at the accelerated level, and that the states be encouraged to carry their full share by continuing the present policy of using federal funds to supplement but not to supplant state funds.

12. While the Committee was requested to review the program for the control and eradication of bovine brucellosis, it was significant to note that many witnesses requested that greater attention be devoted to swine brucellosis than has been true in the past. Emphasized here is that the eradication of bovine brucellosis need not be delayed in the least because of Brucella suis infection in swine.

It is, however, the suggestion of the Committee that the swine brucellosis control program as approved by the U. S. Livestock Sanitary Association in 1949 be recognized and recommended as a voluntary program among the several states. The control procedure outlined might well be included in the revised brucellosis film recommended in this report.

It is obvious that the public health aspects of brucellosis will not be eliminated with the eradication of the disease in the bovine population alone. Brucellosis must be eradicated from the swine population before the national program can be considered complete.

13. Recommendation No. 4 and the present uniform methods and rules for certifying and recertifying areas use the terms "range" and "semi-range." We recommend that these terms be defined as follows:

"Range cattle are generally beef-type cattle which graze on open, unfenced areas such as open areas, unfenced forest reserves or unfenced Taylor grazing areas. Such cattle may or may not belong to different owners and run in common."

"Semi-range cattle are generally beef-type cattle which graze in fenced enclosures."

14. Basic to the control of bovine brucellosis is restriction of the movement of infected cattle. It is recommended that, when state livestock sanitary officials learn of the movement of reactor cattle into their states, they notify the proper officials of the state from which such cattle were moved.

15. To hold the gains made in brucellosis eradication, diseased cattle must not be permitted to reinfect clean herds. It was surprising and alarming to discover that many states still do not control the intrastate movement of possibly infected cattle. These same states, on the other hand, impose controls on cattle imported from other states.

We recommend that the U. S. Department of Agriculture, when allotting federal funds for the control of brucellosis, take into consideration the need for laws or regulations controlling the intrastate movement of cattle.

16. Among many livestock owners is the belief that vaccination for hemorrhagic septicemia causes a temporary reaction to the Brucella blood agglutination test. Thus, an animal might be blood tested in one state and found negative, subsequently vaccinated for hemorrhagic septicemia, and



show positive upon retesting following arrival in a neighboring state. The experience of stockmen and veterinarians should be verified or disproved by well-conducted research.

17. To facilitate the interstate movement of cattle and yet assure protection to the herd and state of destination, we recommend the promulgation of an interstate health regulation on brucellosis. The Department has published a proposed regulation and received industry and professional commentary. On the basis of the information available to the Committee, we believe the regulation to be desirable and sound in its requirements.

18. In the early days of blood-testing in the United States each laboratory generally made its own test fluid (antigen). These antigens varied in some ways and the results obtained with them often were not uniform. Much confusion arose from the fact that the blood from a single animal, sent to several different laboratories, often reacted differently.

When it became well recognized that differences in the antigens used were responsible for many of these discrepancies, the U. S. Department of Agriculture made available all antigens needed for official testing in the United States. This has now been done for about 15 years.

Recently, suggestions have been made that the Department should cease to manufacture this antigen and turn over the task to commercial companies. With these suggestions, we do not agree. In order to retain as high an order of accuracy and uniformity as may be achieved in our official testing program, we think it important that all antigen should come from a single source, and that the Department is the best source in view of its extensive experience in producing it. We do recommend.

19. Our Committee believes that, in carrying on an official disease control project, uniform methods should be used wherever practicable. With beef-type cattle particularly, we recommend that the use of the newer-type, permanently colored metal tags be widely encouraged to identify official calfhood vaccinates and reactors to the blood test (in addition to appropriate tattoos or brands).

Attachment

SUGGESTED QUESTIONS FOR THE EVALUATION OF THE STATE-  
FEDERAL BRUCELLOSIS ERADICATION PROGRAM

1. Has your State set a goal for becoming brucellosis free? (Question for State organizations only)  
  
If so, what is that date?
2. Are the present procedures for herd and area certification and recertification considered adequate and practical for eventual eradication?
3. Should the emphasis on federal financial assistance be placed on area control and eradication?
4. Are the presently used technical procedures (blood test, milk ring test, vaccination) adequate?  
  
If not, what improvements are needed?
5. Is Federal-State cooperation on the State level working smoothly and harmoniously for effective promulgation of the program?
6. Is the information program adequate as a base for control and eradication?  
  
If not, what steps do you recommend on a State and/or Federal level?
7. Is the brucellosis program soundly conceived and carried out in a practical manner?
8. In summary, what specific changes, if any, would you recommend in the brucellosis eradication program?







